Birds of the Tallgrass

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How to Get Started

All questions, comments, and suggestions are welcome and should be forwarded to:

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Welcome to the intriguing world of "birding"... . an exciting, challenging, and rewarding pastime for nature enthusiasts of all ages! It's no longer the domain of the "nerds." Bird watching is now cool! **Birds of the Tallgrass** will introduce your class to the exciting world of nature observation. In today's electronic world, children are spending less and less time experiencing the wonders nature has to offer. There's no substitute for the sights, sounds, smells, and feel of the great outdoors...waiting right outside your classroom door!

Materials contained in this kit are geared toward grades 3 to 4 and correlated to Kansas State Education Standards for those levels. In addition, a CD/ DVD player is necessary for some of the activities. **Be aware....this kit contains feathers, which may cause an allergic reaction in some individuals.**

References to items from the trunk will be in **bold print and underlined**. Graphics with a Figure Number referenced will have accompanying transparencies and digital versions on the CD. Watch for the following symbols to help guide you through the booklet:

Indicates a class discussion point and potential writing activity.

Indicates further resources on the Web for extension learning.

Math Counts! Exercise for mental or written arithmetic.

Vocabulary Counts! New vocabulary that may need reinforcement.

Community Counts! Opportunity for verbal interaction with community members.

Please help us continue to share these treasures with other students by treating the trunk contents with respect. Good luck and enjoy!

Curriculum Standards (Kansas)

The activities and materials in this trunk have been compiled to meet curriculum standards for the State of Kansas Department of Education.

Subject	Benchmarks	Lesson A	Lesson B	Lesson C	Lesson D	Lesson E	Lesson F	Lesson G	Lesson H
Science as Inquiry	1		X	X					
Physical Science	1	X	X	X				X	X
	2	X						X	X
	3	X					X	X	X
	4	X				X			
Life Science	1	X	X	X	X	X	X	X	X
Earth and Space	1				X				
	2	X							
Science and Tech.	1	X							
	2	X				X	X	X	X
History and Nature	1	X				X	X	X	X

Curriculum Standards (National)

National Science Education Standards	Standard C (Life Science): The characteristics of organisms, life cycles of organisms, organisms and environments. Standard F (Scienc e in Personal and Social Perspectives): Characteristics and changes in populations, types of resources, changes in environments, science and technology in local challenges. Standard G (History and Nature of Science): Science as a human endeavor.
National Council of Teachers of English	Standard 1: Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Standard 3: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. Standard 6: Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and non-print texts.
National Center for History in Schools	Standard 4E: The student understands national symbols through which American values and principles are expressed. Standard 6A: The student understands folklore and other cultural contributions from various regions of the United States and how they help to form a national heritage. Standard 8A: the student understands the development of technological innovations; the major scientists and inventors associated with them and their social and economic effcts.

PRE-ACTIVITIES

1. Have the class watch the "Eyewitness Bird" DVD. Discuss the film afterwards.

2. Choose a walking route outside that will be used for your birding trail. Ask the students to record observations of natural things as you lead them along the trail. After discussion, save these observations to make comparisons with another walk you'll make after the completion of the bird trunk activities. Use the Bird Observation Data Sheet on page 41.

3. Have the students select one bird from the list on page 39. They will get to study this bird, learn what it looks like, and learn it's call or song. You might like to have them tell the class about their birds. Have them use the Kansas Birds field guides and All About Birds as resources.

4. Ask the class to talk about what birds they already know. What birds have they heard of but have never seen?

Lesson A: What makes a bird...a bird?

Objectives:

- Students will learn about the physical properties of birds .
- Students will learn about different wing shapes and uses.
- Students will construct a paper bird.

Materials:

___ Raptor Force DVD
___ Poets of the Air CD
___ Loose feathers
___ Bird bag

Curriculum Standards:

Physical Science
- B1- will develop skills to describe objects.
- B2- will describe the movement of objects.
- B3- will recognize and demonstrate what makes sounds.

Life Science
- B1- will develop knowledge of organisms in their environment.

Earth and Space Science
- B2- will observe and describe objects in the sky.

Science and Technology
- B1- will work with a technology design.
- B2- will apply their understanding about science.

History and Nature of Science
- B1- will develop an awareness that people practice science

Vocabulary Counts:

adaptation
niche

They are the most visible, and some of the easiest creatures to observe in the wild. We see them everyday, and they will tolerate humans enough that with good binoculars, a person can get an excellent look at them. A few species, in particular the hummingbirds, have been known to actually perch on a person's hand while sipping nectar from a feeder! Those individuals who have been lucky enough to hold a bird in their hand have been surprised by just how lightweight birds really are!

Birds are, after all, just a lot of air! If their bones and feathers were not mostly hollow, they wouldn't be able to get off the ground! Take a look at one of the feathers to see that it is hollow. Their bones have many air spaces supported by strut-like reinforcements. On the other extreme, those birds that need to dive under water rather than fly, need extra weight for ballast and so have very dense, solid bones.

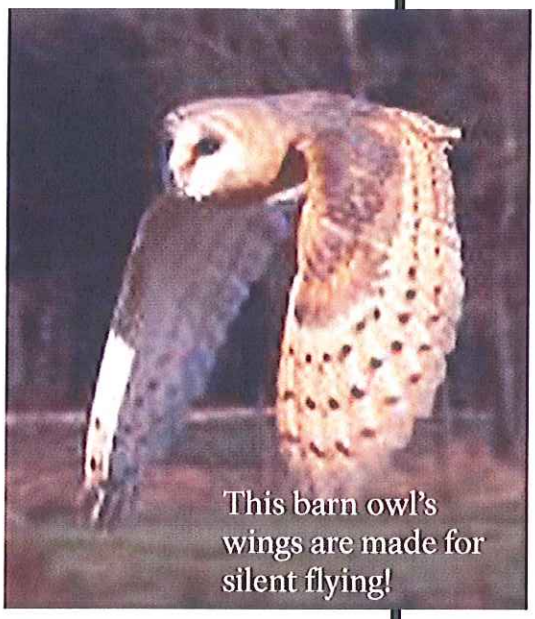
What do you think would happen to us if our bones were hollow? Would we be able to fly?

Could we run, jump, and lift heavy weights if our bones were hollow? How are our bones different and what can we do that a bird can't? What can a bird do that we can't? These differences are known as *adaptations,* and these adaptations allow every plant and animal on earth to fill their special *niche* which is their "job" in nature. You can find adaptations in beaks, feathers, feet, and just about anything else in nature.

Have you ever seen a hawk hovering overhead, or seen a big turkey fly straight up off the ground into a tree? Why is it that an owl can fly silently? The secret is all in the wing structure.

Just like different types of airplanes have different types of wings, so do birds. If we look up in the sky, we might see a hawk or vulture circling around. They have large, flat, wide wings that can keep them soaring for hours at a time, even without flapping their wings. The size of their wings provides enough lift to keep them aloft as long as there are updrafts or warm-air thermals to hold them up.

This bald eagle uses large, wide wings for soaring.



This Peregrin Falcon has short, swept-back wings for speed.

This Hummingbird's wings are perfect for hovering in place.

Vocabulary counts:

hover

prey

You might also see a falcon that suddenly dives towards the ground. This bird has wings that, like a fighter jet, can pull its wings back, and attain very fast speeds; as fast as 100 mph or more!

What about birds that can *hover* in place? True hoverers, like the hummingbirds, flap their wings as many as 20 to 80 times per second in a figure-8 pattern. This back and forth movement allows them to remain stationary.

Another group of birds can also hover, but they do it differently than the hummingbirds. The kestrel flies against the wind and, just like a kite, can stay in one spot while it looks for prey below, and then drops down on top of it.

If you're out at night, you **might** see an owl fly by, but you probably **won't** hear it! Their wings are special wings that allow them to approach their prey silently, due to rough-edged feathers on the leading edges of their wings. This rough edge breaks up the air flow over the wing that, in other birds with smooth edged wings, creates noise.

ACTIVITY #1.... Watch the DVD, **Raptor Force**

ACTIVITY #2... View the **Poets of the Air** CD. Using the paper birds, construct your flying birds; remember to put your names on them. After some experimental flights, see who can fly theirs the farthest. What kind of design changes, or adaptations, can you make to your bird to make it fly faster, or farther?

ACTIVITY #3...Looking at all the pictures in the **bird bag**, can you decide which ones are birds and which ones aren't? Why aren't some of them birds?

Lesson B: Light as a Feather

Objectives:

- Students will learn the different purposes of feathers.

- Students will learn the structure of feathers and how feathers work.

Materials:

___ loose feathers

___ four wings

___ feather/talon display

___ clear bag with down feathers

___down "glove"

___ magnifying glass

Curriculum Standards:

Science as Inquiry

B1- plans and conducts a simple investigation.

Physical Science

B1- will develop skills to describe objects.

Life Science

B1- will develop knowledge of organisms in their environment.

vocabulary counts:
warm-blooded
insulation
rudder
camouflage

Feathers are the most interesting flight adaptation. Without them they couldn't fly. Since birds are *warm-blooded*, just like us, they need a way to keep warm in the winter. Humans can wear layers of clothing and heavy coats to stay warm. Feathers provide that *insulation* for birds to help keep them warm in cold weather. They are also waterproof and will easily shed water. Birds grow thousands of feathers, but feathers make up only about 10% of the birds total weight.

Look at the structure of a feather. If you take part of the feather edge between your thumb and forefinger and gently pull, you can see that the rest of the feather moves with it as one. If you pull a little harder, you can tear the feather easily. The feather's vane is held together by barbs that will hook together and hold...much like Velcro. If the vane tears, all the bird has to do to repair it is run the tear through its beak, and the barbs will re-connect.

Three main types of feathers perform specialized functions. Closest to the skin is the *down*, which provides warmth. We use down in pillows, comforters, and jackets to help keep us warm. Down feathers do not have the barbs, so they flow loosely, helping to trap air for insulation. The *semiplume* feathers have a little more form to them, helping to fill in and insulate between the down and *contour* feathers. The contour feathers cover the ouside of the bird and help streamline it as well as repel water.

Tail feathers can also serve as a *rudder* for ducks that swim underwater. They also help prop up a woodpecker as it pecks into a tree.

Feathers can be colorful for display, or plain to provide *camouflage*. Birds' feathers will even change colors during different times of the year for breeding. Female birds are the plain colored ones, while the males are the colorful ones. In some birds, the juvenile birds will not get the adult plumage for several years. Bald eagles will not get the white head and tail until they are 4 to 5 years old.

Some birds even have bristles around their mouths to help collect insects. These bristles are also a type of feather.

ACTIVITY #4... hold your hand in the **down glove** for several minutes. What happens? Students should realize there is a lot of trapped air in those down feathers . It's the air that helps to keep birds warm. Did their hands get warm?

What happens when down gets wet? When down gets wet, it compresses and can no longer trap the air. The down feathers lose their insulating properties. So, how do birds stay warm and dry in the rain?

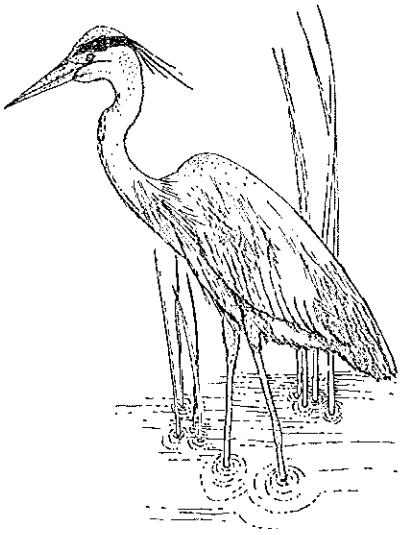
....*Continue on to the next activity to find out.*

ACTIVITY #5... take a **feather** or one of the four **duck wings** and run water over it ...what happens? Water runs right off. This allows the rain to run off and also helps when some birds dive underwater. It's this water-repellent property plus the natural oils in the birds preening glands that help keep the under feathers dry and therefore, keeps the bird warm.

Important!!

Please let the feathers and wings dry completely before placing back in the bag.

Lesson C: Noses and toes



Objectives:

- students will learn the different types of beaks and legs, and their different uses.

Materials:

___Beak chart

___Talon Display

___Food / prey pictures

___Bird pictures

___Display boards

___Coloring pictures

Curriculum Standards:

Science as Inquiry

Bi- will develop skills to conduct a simple experiment.

Physical Science

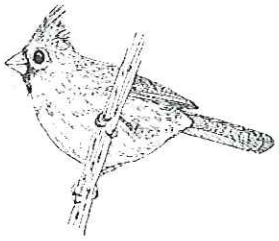
Bi- will develop skills to describe objects.

Life Science

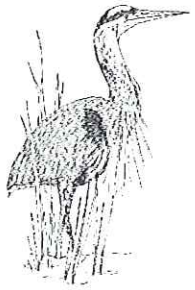
Bi- will develop knowledge of organisms in their environment.

Compare the different types of beaks below...

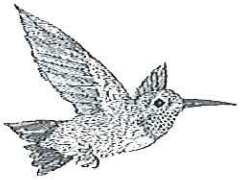
cardinal



great blue heron



hummingbird



BEAKS

Birds' bills, or beaks, are adapted for many different uses. Not only do they pick their food with it, they preen, build nests, dig, attack and defend, and even turn their eggs with it.

(*what is the* very first *use of a bird's beak? Answer....to break out of the egg!*)

Beaks are specially adapted to eating special types of food, like seeds, bugs, nectar, fish, and meat.

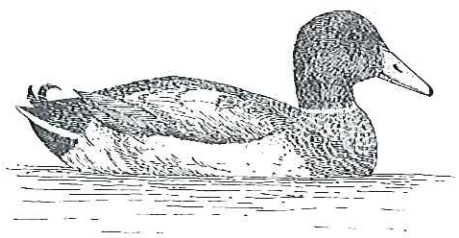
Birds that eat seeds have conical bills. Cardinals, finches, and sparrows all have this kind of bill made for crunching seeds. However, if they get the chance, they will also eat berries and bugs, especially in the spring when their babies need more protein.

Birds with straight bills are used for catching insects or probing beneath the mud or sand. Straight bills come in different sizes in different species. Robins will pick up bugs on top of the ground, while nuthatches and warblers, with their shorter bills, pick insects from under the bark of a tree. Phoebes and flycatchers fly off a branch to catch their insects in mid-air.

Birds that eat meat, like hawks and eagles, have bills that are hooked and sharpened for cutting and tearing meat.

Wading birds that you'll find around creeks and ponds have long beaks for catching fish, frogs, or crayfish. Great Blue Herons can actually spear a fish with its long pointed beak. When hunting, they will either wade very slowly, or remain in place until prey comes along.

Other types of bills include the hummingbird's bill, built for probing into deep flowers to get to the nectar. Ducks and geese have wide, flat bills to catch fish and plants, but filter out the water.



mallard

TALONS

The legs and feet of birds are as diverse and specialized as their beaks. The Great Blue Heron has long legs for wading in the water, but he's not a swimmer so his feet are not webbed like a duck. The Red-Tailed Hawk has very sharp claws and a strong grip for piercing and holding onto it's prey. At the other extreme, the legs of the Common Night Hawk are not well developed, and when it's not flying, will be perched on the ground or on top of posts. A duck could not swim very well if it had the feet and talons of a Golden Gagle.

ACTIVITY #6...

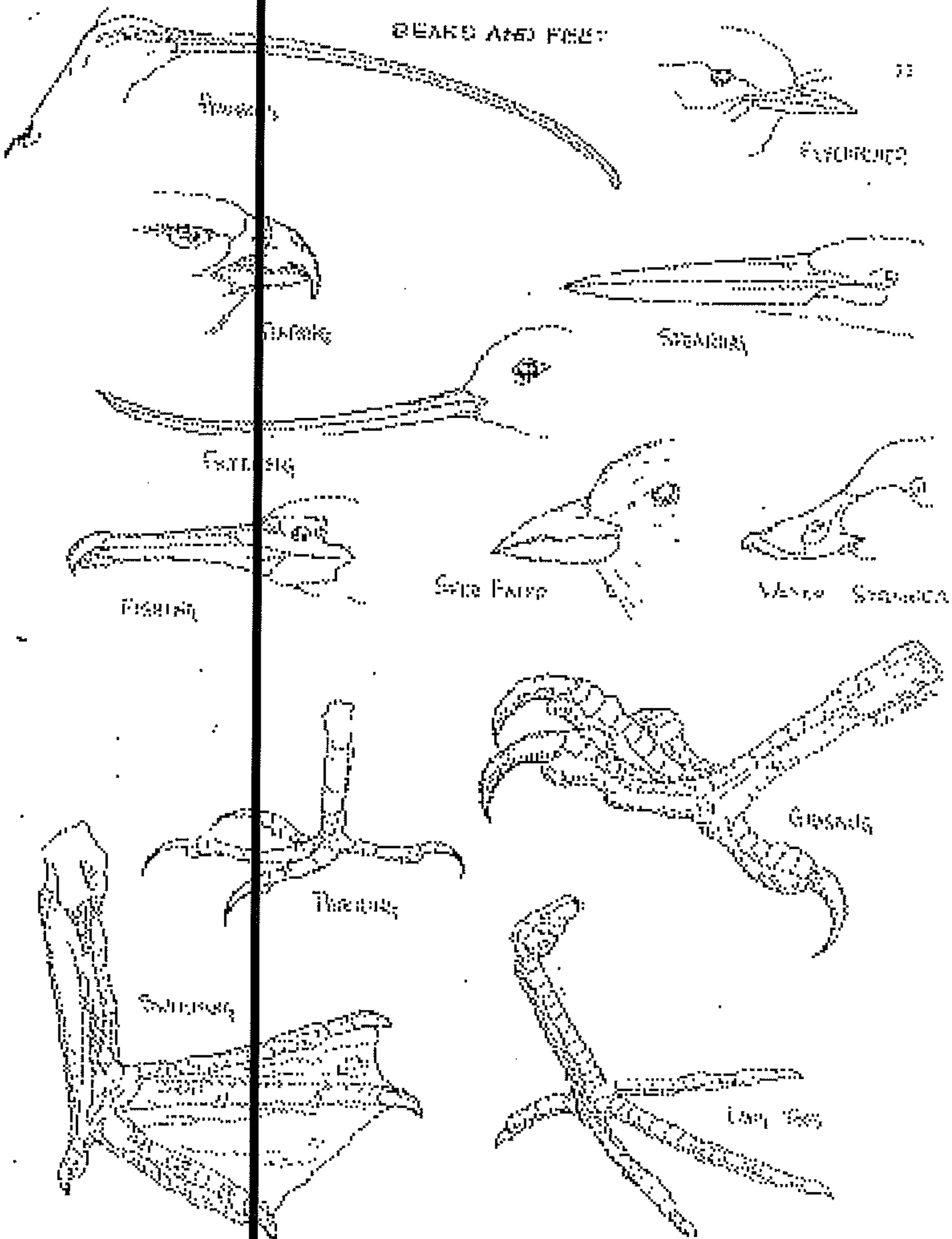
A bird's beak will tell you what kind of food they eat....insects, seeds, meat, fish, nectar... anything else? Their feet will also give you a clue as to what kinds of food they eat and the type of habitat in which they live. What are their feet used for....perching, swimming, grabbing, crushing... anything else?

Can you see how they work together? A hummingbird beak would not go very well with an eagle's talons! How do you think a Greater Prairie Chicken would do with a Mallard's feet?

Place the four habitat pictures on the display boards. Now have the students place the food/prey pictures in the habitat where they would be found. Finally, have them place the bird pictures in the most suitable habitat, based on what kind of food the birds eat.

ACTIVITY #7...

Using the bird field guides as references, color some of the coloring pictures found in the back sleeve of the activity booklet, paying attention to the differences between the female and male.


BEAKS AND FEET

Lesson D: No Place Like Home

Objectives:

- students will learn the major habitats in the tallgrass prairie.

- students will be able to associate birds with the correct habitat.

Materials:

___Bird pictures

___Habitat pictures

Curriculum Standards:

Life Science

B1- will develop knowledge of organisms in their environment.

Earth and Space Science

B1- will develop an understanding of the properties of earth materials.

vocabulary counts:
habitat
transient

There are a huge variety of birds, each one with different characteristics that allow it to live within a certain habitat. That habitat provides particular food, shelter, and space for only certain species. *Habitat* is another word for an ecological community. Habitats include beaches, forests, deserts, swamps, grasslands, oceans, rivers, and jungles. These are only a few; there are many more. The grasslands include the tallgrass prairie that is found on the eastern edge of the central plains. The Tallgrass Prairie National Preserve is home to as many as 150 species of birds during the course of the year. Many species, such as meadowlarks and prairie chickens, can be found year-round at the preserve. However, most of the birds seen are *transient* or migratory species.

Here you'll find birds that have adapted to living in tall grasses. They've learned to live with fire and drought, and also how to survive with many different predators . The birds you'll see in the prairie are often the same color as the grasses. This is an adaptation for hiding in the grass.

Within the grassland we'll find other habitats as well. Even within each habitat there are zones or levels in which you can find certain birds.

Lets take a look at four of the major habitats found in the Tallgrass Prairie National Preserve. They are the upland, bottomland, riparian, and aquatic habitats.

upland...this habitat is higher and drier than the other habitats. It's mostly grass, with some shrubs and a few trees. Springs are found at the head of the drainages, along with some shrubs. Birds commonly found here include the Upland Sandpiper, Prairie Chicken, Eastern Meadowlark, Northern Harrier, Horned Lark, Grasshopper Sparrow, Scissor-tailed Flycatcher, Northern Bobwhite, Killdeer, and Dickcissel.

bottomland/woodland...this habitat is found just above the creeks and includes the floodplain that stretches out towards the uplands. This contains the most fertile soil and has usually been farmed. It contains many of the grasses found in the upland habitats. Common birds include the Eastern Bluebird, Cedar Waxwing, Red-bellied Woodpecker, Northern Flicker, Red-tailed Hawk, American Kestrel, Wild Turkey, Barn Owl, and Eastern Phoebe.

riparian...this is the habitat found right alongside waterways like rivers and streams. Here you're likely to find reeds, willows, cattails, and trees. Common birds of this habitat are the Common Yellowthroat, Red-winged Blackbird, Great Blue Heron, and Belted Kingfisher.

aquatic... aqua means "water," and this includes ponds, lakes, as well as rivers and streams. Common birds found here include the Mallard, Redhead, Bufflehead, Wood Duck, Canvasback, Canada Goose, American Coot, and Blue-winged Teal. Ducks are known as "dabblers", or surface feeders. Diving ducks will dive and swim below the surface, using lobed or webbed feet to help propel them as they chase small fish.

ACTIVITY #8....

Using all of the available bird guides in the trunk, have the students research and study about the bird they chose in the #3 pre-activity. You may want to divide them into their habitat groups. This will allow them to become familiar with the bird guides.

Lesson E: Bird Science

Objectives:

- students will learn the major flyways of North America.

- students will learn the importance of habitat for migratory birds.

- students will learn how research is done today versus 19th century.

Materials:

___Migration poster

Curriculum Standards:

Physical Science
B4- explores interactions of magnetic forces.

Life Science
B1- will develop knowledge of organisms in their environment.

Science and Technology
B2- will apply their understanding about science and technology.

History and Nature
B1- will develop an awareness that people practice science.

John James Audubon

Alexander Wilson

Cornell Lab of Ornithology is a leader in bird studies. To find out more about their work and to get tons of information, go to www.birds.cornell.edu

The early studies of birds began with the early explorers of North America. *Ornithologists* like Alexander Wilson and John James Audubon roamed the country during the early 1800s collecting and painting hundreds of species of birds in North America. Since they did not have cameras or binoculars in those days, their method of getting a close look at a bird was to shoot it! With today's super-powered binoculars it's not necessary to shoot a bird to study it. Birders can get close enough to see the detail on the bird's feathers. It looks like you can almost reach out and touch it!

Today, although much research is done using electronic equipment with excellent audio and visual capabilities, it is occasionally necessary for scientists to capture a live bird for study. For this they use nets ranging from fine, almost invisible nets to heavier nets that can be shot over an entire flock. Once captured, they might mark certain birds with leg bands. These bands have a unique serial number that when found and reported to the Bird Banding Laboratory in Maryland, will tell researchers how far the bird has traveled from its original position. Since the 1920s, over 40 million birds have been banded, providing valuable information that has greatly increased scientists' understanding of the birds' migration patterns and populations.

Here at the Tallgrass Prairie National Preserve, biologists conduct studies that will tell them about the population trends of grasssland bird species. These studies will also tell them other things, such as nest survival rate and vegetation structure. By taking blood and feather samples, they can even tell in what region the bird lived the previous year.

These types ofstudies will not only benefit wildlife preserves, but will also be useful for anyone who manages grasslands for hunting game birds like wild turkey, quail, and pheasants.

Due to many different reasons, many birds in North America are declining in numbers. The National Audubon Society published a list of the top 20 common birds in decline.

ACTIVITY #9

Go to the Audubon website on page 44 and click on "state of the birds." There you will find the top 20 list. See which birds are found in the Tallgrass Prairie National Preserve, and learn what you can do to help.

ACTIVITY #10

Take a look at the football. It has some information about the Greater Prairie Chicken, a very important species at the tallgrass preserve. If you can, take that football and throw it into some tall grass. If you can see the football, the grass is not tall or thick enough for a prairie chicken to hide in. This is a useful tool for determing adequate habitat for the Prairie Chicken.

vocabulary counts:
migration
flyway

Migration is an ancient practice of traveling north and south as the seasons change. In the spring, many birds fly north to breed and nest in North America. There are four major routes these birds take and these routes are called *flyways*. They are the Pacific, Central, Mississippi, and Atlantic flyways. In the tallgrass prairie, the Upland Sandpiper flies north from Argentina in South America to nest in the prairie each spring.

Upland Sandpiper

ACTIVITY #10....

Using the **migration poster** and **Kansas Birds**, find out how far each bird below travels each year during its migration. Remember that they also make a return trip every year. Which bird travels the farthest in its migration? Which one travels the shortest distance?
Which birds travel through Kansas?

Upland Sandpiper	Least Tern
Arctic Tern	Turkey Vultures
Yellow Warbler	Eastern Phoebes

Lesson F: Songs of the Prairie

Objectives:

- students will study songs of select birds of tallgrass habitats.

- students will be able to identify several birds by song alone.

Materials:

- CD of birdsongs

Curriculum Standards:

Physical Science
B3- will recognize and demonstrate what makes sounds.

Life Science
B1- will develop knowledge of organisms in their environment.

Science and Technology
B2- will apply their understanding about science and technology.

History and Nature of Science
B1- will develop an awareness that people practice science.

Most all birds make some sort of vocalizations. The ones we're most familiar with are the songbirds. Each spring, we are treated to choruses of a variety of songs that tell us what birds are out there. With practice, we can identify a species by its songs and calls without ever seeing the bird.

During the breeding season, the males will sing to declare to other males in the area that this is their territory, and for them to stay away! Singing also impresses and invites the females to breed. Many of the male songbirds have at least two different songs to sing. Some species, like the Brown Thrasher, can have thousands of songs! Usually, songbirds will begin singing at morning's first light. In the heat of the day, singing will decrease, but will start up again in the early evening.

Not only do birds have songs, but they also make other sounds as well. Chirps, screeches, and other shorter vocalizations can be used for warning calls, or to locate another member of the flock.

School children are taught about their state bird. What is yours? The Kansas state bird is the Western Meadowlark. It was selected as the state bird in 1925 by Kansas school children. The Western Meadowlark's flutelike song and bright yellow markings made it a popular choice. It is also the state bird of Nebraska, North Dakota, Oregon, Montana, and Wyoming. When was your bird selected, and by whom?

The Eastern Meadowlark prefers the taller grass of eastern Kansas. It looks identical to the Western Meadowlark, but its song is quite different from the Western. Like many of the tallgrass birds, it builds its nest on the ground, made out of grasses. It can often be seen perched on top of fence posts along the road.

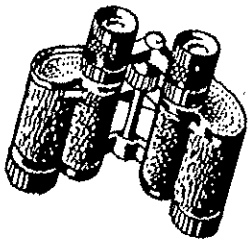
Try this interactive birding site...

www.birdsource.org

ACTIVITY #11....

Choose the **CD tracks** that correspond with the 24 birds used in the **Bird Challenge** game. Play the tracks and show the bird pictures at the same time. Then, see if you can remember any of the songs as you play them again. This will help when you play the Bird Challenge, and also assist the class when they go into the field to observe birds.

Lesson G: Look....up in the Sky!



Objectives:

- students will learn how to use binoculars.

- students will learn helpful birdwatching techniques.

Materials:

___ binoculars

___ field guides

___ Bird Observation data sheet

Curriculum Standards:

Physical Science
- B1- will develop skills to describe objects.
- B2- will describe the movement of objects.
- B3- will recognize and demonstrate what makes sounds.

Life Science
- B1- will develop knowledge of organisms in their environment.

Science and Technology
- B2- will apply their understanding about science and technology.

History and Nature of Science
- B1- will develop an awareness that people practice science.

Before you go out into the field to look for birds, let's take a look at some techniques that will help you find and identify them. First thing you need to do is decide where you're going. Are you going to the mountains, the grasslands, a desert, a lake; or are you hiking along a river?

Once we know what habitat we're going to be in, we can then review the kinds of birds we might expect to find there. Some of these birds were covered in Lesson D, so refresh your memory of those birds mentioned. Find those birds in the field guide and look at them carefully, taking note of the field marks. Field marks are special shapes or colors that are unique to that bird. ...no other bird has those marks. So, if you see those marks, you know it was "that" bird. Listen to their songs a few times. Becoming familiar with bird songs will greatly increase your ability to locate particular birds.

Some bird songs or calls are very easy to learn. Many advanced birders and most ornithologists recognize birds by sound alone. Remember, many birds migrate and will not be in your area during certain parts of the year. Your field guide should be able to tell you that also.

You've learned about some of the habitats and the birds that can be found there. In order to see them better, **binoculars** are very helpful. Before you even look through the binoculars, put them around your neck so there's no danger of dropping them. Binoculars are expensive and not a toy. You also want to be careful not to touch the glass lenses; you'll leave fingerprints, scratches, or smudges that will make it hard to see through.

Binoculars have a focusing ring on them that will bring everything you look at into focus. Practice before you go out into the field so that you know how to focus on an object quickly. Birds often will not remain still for very long, so you need to know how to focus quickly. By having your binoculars focused at mid-range, you can quickly focus on objects closer or farther away. *(Refer to page 33 for easy instructions on the use of binoculars.)*

When you spot a bird, keep your eyes on it and bring the binoculars up to your eyes. That way, you won't lose sight of the bird. If you are so close that the bird will not come into focus, you are too close...move back until it comes into focus.

When you're walking along, keep your eyes constantly searching high and low. Birds and animals see us long before we see them. They sometimes will "freeze" while they are checking us out. Look for shapes that "just don't look right"....things that look out of place. A bump on a log a hundred yards a way might be a bird, a squirrel, a lizard, a bobcat... or it might be just...a bump on a log. Check it out anyway. With experience, you'll be able to spot a bird in a faraway tree when no one else can!

ACTIVITY #12...

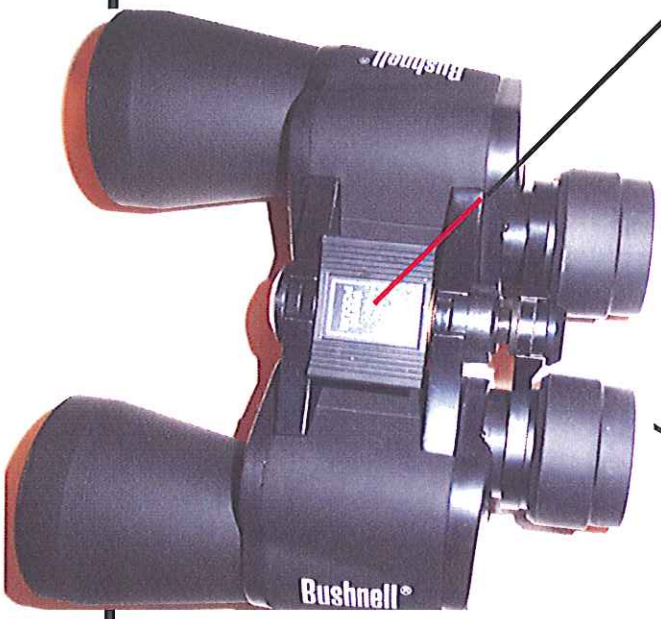
Standing in the back of the classroom, practice using the binoculars. Pick an object (large lettering is very useful for this exercise) and try to focus until you get a very sharp image.

Next, pick out an object and bring the binoculars up to your eyes to view that object. Were you successful, or did you lose the object. With practice, you'll be able to look exactly where you intended to look, without moving the binoculars all around to try and find it.

ACTIVITY #13...

Let's go birding! When you get to your birding site, you need to remember that other people may be out there as well. So, you want to be very quiet and move slowly so you don't scare off the birds that others may be looking at. Talk very quietly and don't slam car doors... even in the parking lot!

If you're on the trail around your school and are near the front of the line, it's very important to be quiet. Those in the back of the line will miss seeing any of the wildlife that was scared away.



1. Remove the four lens caps and place them in the binocular case.

2. Place the strap around your neck.

3. On the right ocular lens, line up the white "o"(found between the + and - symbols) with the white diamond.

4. Holding the binoculars up to your eyes, twist the two barrels up or down until the eye cups feel comfortable and you get a round image. If you wear eyeglasses, fold down the eye cups.

5. Using your fingers, adjust the "Insta Focus"wheel to the left or right to bring the image into focus.

6. When finished using the binoculars, clean the lenses with the yellow cloth provided, place the lens caps back on the lenses, and place binoculars back into the case.

Lesson H: Games and Activities

Objectives:

- students will get practice in identifying birds, using concentration and memory skills.

Materials:

___ Bird Challenge game

___ bird pictures

___ field guides

Curriculum Standards:

Physical Science
- B1- will develop skills to describe objects.
- B2- will describe the movement of objects.
- B3- will recognize and demonstrate what makes sounds.

Life Science
- B1- will develop knowledge of organisms in their environment.

Science and Technology
- B2- will apply their understanding about science and technology.

History and Nature of Science
- B1- will develop an awareness that people practice science.

Activity #14....

Match songs with birds

-students will each get one bird picture from the Bird Challenge game. Teacher will play the bird songs from the Bird Challenge game CD, calling out the bird name as it is played. Students will hold up their bird picture when they hear their bird singing.

Activity #15....

Match field marks with birds

For this activity, use the bird pictures from the Bird Challenge Game.

1. **Easiest**....ask the students to identify field marks. Show them a series of bird pictures, starting with the ones with very obvious fieldmarks such as bright colors, crests, stripes, or other distinguishing features. Then move to the less obvious marks like wing bars, spots, tail shape, eye ring, etc.

2. **Harder**... showing all new pictures, ask the students to pick out the field marks, and then have them find the bird in the field guide, while still showing the picture.

3. **Challenging**...Finally, show the picture for a brief time, maybe 5-10 seconds, asking them to remember the field marks they see. Ask them to write down what they saw. Then see who can be the first to find the bird in the field guide .

Activity #16...

BIRD CHALLENGE

Game overview:

Teams will be given clues to help them identify bird pictures. The team which identifies the bird first wins the alloted points, depending on how many clues were given. Clues attached to tongue depressors are inserted into a base for easy reference.

Full pictures of birds will be posted on corresponding habitat boards in full view of the class. To make it challenging, there will be "extra bird" pictures that will not have clues but might have similar markings ...this is so the students will have to dig deeper to identify the bird...similar to real field experience.

Number of cards:

- 4 Habitat cards
- 8 Birds/Habitat = 32 Bird Cards
- 5 Clues/Bird...
  - (4) Body and head
  - (1) Wild Card....song or call

There are two habitat boards with both sides suitable for using. To save time, it is recommended that all four habitats and accompanying birds are setup before the game begins. Since only one habitat will be used at a time, it is a simple matter of turning the boards around to show the chosen habitat.

Rules of the Game

1. Divide the class into teams of 3 to 4 students each. To set up the game, attach the four habitat pictures with their corresponding birds to the habitat boards.The habitat picture is placed in the middle and the birds placed around it, in no particular order. Refer to the illustration on page 38 for a visual reference. If necessary, refer to the bird list on page 39 for assistance on bird groupings.

*(*A basic version of the game would be to display only the six birds listed in the habitat lists. To add more of a challenge, show the two extra birds included in the habitat as well. These extra birds have similar markings and should make the students investigate further to make a correct identification.)*

2. To start the game, one team chooses one of the four habitats. That habitat board is then displayed in front of the class. Teacher will then choose one of the six bird-clue envelopes from the chosen habitat, without telling the class what the bird is. The teacher will then draw one of the five clues, at random, and place it in the first spot on the clue holder with the picture facing out .

The clues are field marks of the birds displayed on that board, so students should not need to use the field guides.

That same team then has fifteen seconds (*more or less...time is arbitrary and can be adjusted by the teacher to reflect class ability*) to guess the bird. If guessed incorrectly, the next team can either guess, or ask for another clue.

Teams continue in turn until the bird is correctly identified or until all of the clues for that bird have been used. Each time a clue is requested, the points awarded for a correct identification will decrease according to the table below:

1 clue = 10 points
2 clues = 8 points
3 clues = 6 points
4 clues = 4 points
5 clues = 2 points

Wild card is worth double whatever number the clue is . For example, if the third clue drawn is the wild card, it would be worth 6 points(doubled) =12 points.

3. Four of the five clues will be pictures of various parts of the bird. The "wild card" clue is the song or call, and will be found on the CD track indicated. As clues are requested, they are inserted into the clue holder in the order in which they are chosen, thus indicating the points available for that turn.

4. After the bird is identified or clues have run out, play continues with the next team selecting a different habitat. After all four habitats have been played once, teams may then choose any one of the habitats on their next turn. However, the same habitat may not be used twice in a row.

5. The length of the game will be determined by the teacher. Several suggestions for determining a "game" are time limit, certain number of birds, or the first team to reach a certain score. The team with the highest score at the end of the game will be the winner.

*** Please take care to place all of the clues back in their proper envelopes.

Correct set-up of the Bird Challenge habitat board.

1. Habitat picture is in the middle with bird pictures attached around it in no particular order.

2. Both sides of both panels can be set up at the same time to expedite the game.

UPLAND (CD Track#)

Upland Sandpiper (1)
Greater Prairie Chicken (2)
Eastern Meadowlark (3)
Northern Bobwhite (4)
Dickcissel (5)
Killdeer (6)

Extra birds
Horned Lark
Scissor-tailed Flycatcher

WOODLAND

Eastern Bluebird (7)
Red-bellied Woodpecker (8)
Red-tail Hawk (9)
American Kestrel (10)
Wild Turkey (11)
Eastern Phoebe (12)

Extra birds
Northern Flicker
Cooper's Hawk

RIPARIAN

Yellow Warbler (13)
Common Yellowthroat (14)
Red-winged Blackbird (15)
Great blue Heron (16)
Belted Kingfisher (17)
Great Egret (18)

Extra birds
Green Heron
Cattle Egret

AQUATIC

Mallard (19)
Wood Duck (20)
Blue-winged Teal (21)
Lesser Scaup (22)
Common Goldeneye (23)
Canada Goose (24)

Extra birds
Canvasback
Northern Pintail

Post-Trunk Activities

1. Walk along the same birding trail that you used in your pre-activities, asking the students to again make observations. Compare these to their first observations. Do their new observations reveal a greater awareness ?

2. Plan a class field trip to a local park where the students can get more experience observing and identifying birds.

3. Expand the students' nature awareness by looking for tracks, feathers, or other clues of wildlife in the area.

4. Visit www.audubon.org to find out how you can help birds in your neighborhood.

5. Contact a local Audubon chapter or Kansas state park, andinvite a speaker to visit your class and talk about birds. Or ask about any future guided bird walks in which the class can participate.

6. Volunteer at a local wildlife rehabilitation center. They will often need extra volunteers, especially in the spring when many baby birds are found.

7. Ask a local Audubon chapter if the class can build bird houses to be placed in local parks. They should be able to give you some guidance on this.

8. Visit the Tallgrass Prairie National Preserve website for their annual Schedule of Events regarding birding and wildlife programs.

Bird Observation Data Sheet

(student)

Name :

Site :

Date : Time:

Temperature : Wind :

Precipitation:

(Size, colors, shape)

Bird #1 Description:

(feeding, resting, flying, preening, fighting, nesting)

Behavior

Bird #2 Description

Behavior

Bird #3 Description

Behavior

Materials

- Poets of the Air CD
- Raptor Force DVD
- Eyewitness Bird DVD and book
- Magnifying glass
- (3) Birding by Ear CDs
- Bird beak/talon chart
- (6) Bird coloring pictures
- All About Birds
- (4) Compact Guide to Kansas Birds
- (4) Pocket Guide to Kansas Raptors
- (4) Pocket Guide to Great Plains Shorebirds
- Faces of the Great Plains poster
- (5) Family Portrait posters
- Talon/feather display
- (4) Binoculars
- Down feathers
- Loose feathers for handling
- (4) duck wings
- Bird Challenge Game
- Migration poster
- Football
- Down pillow

Places to go Birding in Kansas

U.S. Fish and Wildlife Service

Kirwin National Wildlife Refuge, *Kirwin*
Marais des Cygnes NWR, *Pleasanton*
Flint Hills NWR, *Hartford*
Quivira NWR, *Stafford*

The Nature Conservancy

Konza Prairie, *Manhattan*
Cheyenne Bottoms, *Great Bend*
Tallgrass Prairie National Preserve,
(National Park Service) , *Strong City*

Kansas State Parks

www.kdwp.state.ks.us

Nature Centers

Chaplin Nature Center, *Arkansas City*
Great Plains Nature Center, *Wichita*
Milford Nature Center, *Junction City*
Dillon Nature Center, *Hutchinson*
Maxwell Wildlife Refuge, *Canton*

References and Additional Resources

Griggs, Jack. *All the Birds of North America.* Roundtable Press,Inc. ,1997

Thompson, Max. *Birds in Kansas.* University of Kansas, Museum of Natural History, 1989

Erlich, Paul R. *The Birders Handbook.* Simon and Schuster Inc., 1988

Brown, Lauren. *Grasslands.* Chanticleer Press, 1985

Reichman, O.J. *Konza Prairie.* University Press of Kansas, 1987

related websites:

www.birds.cornell.edu

www.birdsource.org

www.whatbird.com

www.audubon.org

www.petersononline.com

www.nationalzoo.si.edu

www.animals.nationalgeographic.com

www.enature.com

INVENTORY

Please take the time to check all of the items in the trunk before and after use. If anything is missing or damaged, please contact us immediately.

Tallgrass Prairie
National Preserve
2480B KS Hwy 177
Strong City, KS 66869
(620) 273-8494
tapr_interpretation@nps.gov

____ activity booklet , including cd with pdf file
____Poets of the Air CD
____"Raptor Force" DVD
____Eyewitness Bird DVD and book
____(3) Birding by Ear CD
____Magnifying glass
____All About Birds notebook
____(4) Compact Guide to Kansas Birds
____(4) Compact Guide to Kansas Raptors
____Pocket Guide to Prairie Birds
____(4) Pocket Guide to Great Plains Shorebirds
____(2) Waterfowl..Faces of the Great Plains poster
____(5) Family Portrait poster
____North American migration poster
____Talon / feather display
____(4) binoculars
____Down feathers/clear bag
____Down feather "glove"
____Loose feathers for handling
____(4)Duck wings
____football
____bird bag
____food/prey bag

____Bird Challenge Game
- ___(2) Habitat boards
- ___Riparian Habitat and (8) bird pictures
- ___Woodland Habitat and (8) bird pictures
- ___Aquatic Habitat and (8) bird pictures
- ___Upland Habitat and (8) bird pictures
- ___Clue Points Board
- ___(24) Clue envelopes, each with 5 clues
- ___Game CD of bird songs